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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/801,329

03/15/2004

Nadim Y. Abdo

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EXAMINER

PEREZ, CARLOS R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/801,329	Applicant(s) ABDO ET AL.	
	Examiner CARLOS R. PEREZ TORO	Art Unit 2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/3/05; 7/28/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to Application No. 10/801,329 filed on 03/15/2004, claims 1-46 have been examined.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claimed language "computer-readable media" included claims 11, 16, 22, and 38-46 is not defined in the specification.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 23-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 23-37 are not limited to tangible embodiments. In view of Applicant's disclosure, specification paragraph 0033, the system and server are not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., software) and intangible embodiments (e.g., processor and memory). As such, the claims are not limited to statutory subject matter and are therefore non-statutory.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-16 and 23-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Whiting et al. (US 5,146,221) (hereinafter Whiting).

7. Regarding claim 1, Whiting teaches a method comprising compressing data for communication in a terminal services environment by:

finding an index in a lookup (hash) table that matches an initial sequence in data (Whiting col 9/ln 42-44; col 10/ln 57-58), wherein:

the lookup table includes a plurality of (bin) entries, each said entry being discoverable utilizing a particular one of a plurality of said (hash value) indices (Whiting col 10/ln 58-60); and

each said entry references whether a corresponding said index is located in a history buffer, and if so, further references (in a hash link table) one or more locations (array pointers) of the corresponding said index in the history buffer (Whiting col 10/ln 58-67); and

if the corresponding said entry of the matching index references a plurality of said locations (Whiting col 9/ln 59):

for each said location, comparing a sequence at the location having the matching index with a sequence in the data, said sequence including the initial sequence (Whiting col 9/ln 49-65);

deriving a matching sequence from the comparison based on at least one of a length and the location of the sequence at each said location (Whiting col 5/ln 61-62); and

representing the matching sequence using a representation that includes the length and the location of the matching sequence in the history buffer (Whiting col 5/ln 66-68).

8. Regarding claim 2, Whiting teaches:

finding one said index in the lookup table for each said sequence in the data (Whiting col 10/ln 58-67);

Art Unit: 2444

forming compressed data that includes one or more said representations (Whiting col 9/ln 65 through col 10/ln 1-5); and
streaming the compressed data (Whiting col 2/ln 1-11).

9. Regarding claim 3, Whiting teaches the corresponding said entry of the matching index references a hash chain (hash link table) which includes each said location of the matching index in the history buffer (Whiting col 10/ln 58-67).

10. Regarding claim 4, Whiting teaches the initial sequence and the index are each composed of at least two bytes (Whiting col 9/ln 58-61).

11. Regarding claim 5, Whiting teaches:
forming compressed data that includes the representation (Whiting col 9/ln 65 through col 10/ln 1-5); and
streaming the compressed data over a network, wherein the data is formatted as one or more packets (Whiting col 2/ln 1-11).

12. Regarding claim 6, Whiting teaches encoding at least one of the length and the location of the representation using an encoding technique selected from the group consisting of:

Huffman encoding (Whiting col 2/ln 32);

13. Regarding claim 7, Whiting teaches:
if the corresponding said entry of the matching index does not reference any said location, encoding the initial sequence by Huffman encoding (Whiting col 2/ln 32);
if the corresponding said entry of the matching index references a single said location:

comparing a sequence at the single said location having the matching index with the sequence in the data (Whiting col 9/ln 49-65);

deriving a matching sequence from the comparison based on at least one of a length and the location of the sequence at the single said location (Whiting col 5/ln 61-62); and

representing the matching sequence using a representation that includes the length and the single said location of the matching sequence in the history buffer (Whiting col 5/ln 66-68); and

when each said sequence of the data is represented or encoded, streaming the data having the encoding or the representation (Whiting col 2/ln 1-11).

14. Regarding claim 8, Whiting teaches the comparison to derive the matching sequence is performed utilizing one or more thresholds selected from the group consisting of:

a number of said locations having the matching index to be compared (MAXHCNT) (Whiting col 14/ln 19-21);

a size of a value that describes each said location having the matching index (MEMSIZE) (Whiting col 10/ln 21-24); and

a size of a value that describes a length of the sequence at each said location that matches the sequence in the data that includes the matching index (MAXSTR) (Whiting col 11/ln 6-7).

15. Regarding claim 9, Whiting teaches employing a cost function (compare size) to determine if the representation utilizes less memory when stored than the matching sequence, and if so, forming compressed data that includes the representation (Whiting col 5/ln 28-34).

16. Regarding claim 10, Whiting teaches determining whether the location of the matching sequence matches one of a plurality of locations in a last recently used (LRU) table (look aside buffer) (Whiting col 15/ln 17-25), wherein:

each said location in the LRU table has a corresponding said LRU representation (Whiting col 15/ln 17-25);

each said location in the LRU table describes one of a plurality of last recently used locations of sequences in previously streamed data (Whiting col 15/ln 17-25); and
if the location of the matching sequence is included in the LRU table, the location of the matching sequence is encoded with a corresponding said LRU representation from the LRU table (Whiting col 15/ln 17-25).

17. Regarding claim 11, Whiting teaches one or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 1 (Whiting Fig 1).

18. Regarding claim 12, Whiting teaches a method comprising compressing data for communication in a terminal services environment by:

- adding data to a history buffer (history array) (Whiting col 10/ln 56-67);
- updating a lookup table that references the history buffer to include the added data, (Whiting col 10/ln 56-67);wherein:
 - the lookup table includes a plurality of entries, each said entry being discoverable utilizing a particular one of a plurality of indices (Whiting col 10/ln 56-67); and
 - each said entry references whether a corresponding said index is located in a history buffer, and if so, further references one or more locations of the corresponding said index in the history buffer (Whiting col 10/ln 56-67);
 - starting a current pointer at the added data in the history buffer (Whiting col 6/ln 62-64);
 - finding one said index in the lookup table that matches an initial sequence at the current pointer (Whiting col 9/ln 42-44; col 10/ln 57-58);
 - if the corresponding said entry of the matching index references a plurality of said locations (Whiting col 9/ln 49-65):
 - comparing a sequence at each said location having the matching index with a sequence in the added input data that includes the initial sequence(Whiting col 9/ln 49-65);

deriving a matching sequence from the comparison (Whiting col 5/ln 61-68);

representing the matching sequence with a representation that includes the location and a length of the matching sequence in the history buffer (Whiting col 5/ln 61-68);

employing a cost function to determine if the representation utilizes less memory space when stored than the matching sequence (Whiting col 5/ln 28-34),

if so, configuring data to include the representation and advancing the current pointer by the length of the matching sequence (Whiting col 5/ln 28-34; col 6/ln 62-64),

otherwise, configuring data to include the initial sequence and advancing the current pointer by a length of the initial sequence (Whiting col 5/ln 28-34; col 6/ln 62-64); and

when the current pointer has advanced through the added data, packetizing the configured data for streaming (Whiting col 2/ln 1-11).

19. Claim 13 is substantially the same as claim 6, and is thus rejected for reasons similar to those in rejecting claim 6.

20. Claim 14 is substantially the same as claims 6 and 7, and is thus rejected for reasons similar to those in rejecting claims 6 and 7.

21. Claims 15-16 are substantially the same as claims 10-11, respectively, and are thus rejected for reasons similar to those in rejecting claims 10-11.

22. Claims 23-28 are substantially the same as claims 1-6, respectively, and are thus rejected for reasons similar to those in rejecting claims 1-6.

23. Claim 29 is substantially the same as claims 6 and 7, and is thus rejected for reasons similar to those in rejecting claims 6 and 7.

24. Claims 30-32 are substantially the same as claims 8-10, respectively, and are thus rejected for reasons similar to those in rejecting claims 8-10.

25. Claim 33 is substantially the same as claim 33 and is thus rejected for reasons similar to those in rejecting claims 12. Furthermore, Whiting teaches a client communicatively coupled to the network and including a second said history buffer and a decompression module that is executable to decompress the streamed data by finding the matching sequence in the second said history buffer based on the location and the length indicated by the representation (Whiting col 16/ln 29-50).

26. Regarding claim 34, Whiting teaches the decompression module is further executable by the client to add decompressed data to the second history buffer (Whiting col 16/ln 29-50).

27. Claim 35 is substantially the same as claims 6, and is thus rejected for reasons similar to those in rejecting claims 6.

28. Claim 36 is substantially the same as claims 6 and 7, and is thus rejected for reasons similar to those in rejecting claims 6 and 7.

29. Claim 37 is substantially the same as claim 10, and is thus rejected for reasons similar to those in rejecting claim 10.

30. Claims 38-39 are substantially the same as claim 1, and are thus rejected for reasons similar to those in rejecting claim 1.

31. Claims 40-41 are substantially the same as claims 3-4, respectively, and are thus rejected for reasons similar to those in rejecting claims 3-4.

Art Unit: 2444

32. Claim 42 is substantially the same as claims 6, and is thus rejected for reasons similar to those in rejecting claims 6.

33. Claim 43 is substantially the same as claims 6 and 7, and is thus rejected for reasons similar to those in rejecting claims 6 and 7.

34. Claims 44-46 are substantially the same as claims 8-10, respectively, and are thus rejected for reasons similar to those in rejecting claims 8-10.

35. Claims 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Tokunaga et al. (US 5968132) (hereinafter Tokunaga).

36. Regarding claim 17, Tokunaga teaches a method comprising:
receiving feedback that indicates availability of resources for communicating data over a network from a terminal service provided by a server to a client (Tokunaga col 3/ln 24-34); and

tuning one or more parameters of a compression routine utilized to compress the data in response to the feedback (Tokunaga col 3/ln 24-34).

37. Regarding claim 18, Tokunaga teaches the resources are selected from the group consisting of:

network resources of the network (Tokunaga col 3/ln 24-34);

38. Regarding claim 19, Tokunaga teaches one or more computer-readable media comprising computer-executable instructions that, when executed, perform the method as recited in claim 17 (Tokunaga Fig 6).

39. Claims 20-22 are substantially the same as claims 17-19 and are thus rejected for reasons similar to those in rejecting claims 17-19.

Citation of Pertinent Prior Art

- 40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- 41. MacCrisken (US 4,730,348)
- 42. Chambers (US 5,155,484)
- 43. Avery et al. (US 2001/0038347)

Comments

44. Examiner, in the body of this action, has pointed out particular references contained in the prior arts of record for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested of the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Conclusion

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARLOS R. PEREZ TORO whose telephone number is (571) 270-5649. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2444

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. R. P./

Examiner, Art Unit 2444

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444